

CORRELATION OF MAP UNITS

ALL TERRANES	
Surficial Deposits	QUATERNARY
Plutonic Rocks	TERTIARY
WRANGELLIA TERRANE	Sedimentary and Volcanic Rocks
Holocene to Miocene	QUATERNARY AND TERTIARY
Early Cretaceous	CRETACEOUS
Late or Middle Jurassic to Late Triassic	JURASSIC AND TRIASSIC
Late and (or) Middle Triassic	TRIASSIC
Early Permian and Pennsylvanian	PERMIAN AND PENNSYLVANIAN
Plutonic Rocks	JURASSIC
Late Jurassic	JURASSIC AND PENNSYLVANIAN AND OLDER(?)
Late Jurassic and Pennsylvanian and older(?)	JURASSIC AND OLDER(?)
PENINSULAR TERRANE	Sedimentary and Volcanic Rocks
Late and Early Cretaceous	CRETACEOUS
Early Jurassic and Late Triassic(?)	JURASSIC AND TRIASSIC(?)
Plutonic Rocks	JURASSIC
Late Jurassic	JURASSIC AND OLDER(?)
Middle Jurassic and older(?)	JURASSIC AND OLDER(?)
CHUGACH TERRANE	Sedimentary and Volcanic Rocks
Late Cretaceous	CRETACEOUS
Metamorphic Rocks	TERTIARY OR CRETACEOUS
JURASSIC OR OLDER	JURASSIC OR OLDER
PRINCE WILLIAM TERRANE	Sedimentary and Volcanic Rocks
Eocene and Paleocene	TERTIARY

DESCRIPTION OF MAP UNITS

Qs	Surficial deposits, undivided (Quaternary)
Th	Hypabyssal intrusive rocks (Eocene)—Altered granite, granodiorite, or tonalite
OTw	Wrangell Lava (Holocene to Miocene)
Ks	Marine sedimentary rocks (Early Cretaceous)—As mapped, consists of Berg Creek Formation and unnamed marine sedimentary rock
Jbc	Marine clastic and carbonate rocks, undivided (Late or Middle Jurassic to Late Triassic)—As mapped, consists of Kotsina Conglomerate (Middle or Late Jurassic), lower part of McCarthy Formation (Late Triassic), and Chitstone and Nizina Limestones (Late Triassic)
Jn	Nikolai Greenstone (Late and (or) Middle Triassic)
PPs	Skolai Group (Early Permian and Pennsylvanian)
Jc	Chitina Valley batholith (Late Jurassic)
JPhc	Haley Creek metamorphic assemblage (Late Jurassic and Pennsylvanian or older?)—As mapped, consists of Umanina River metaplutonite unit (Jurassic and Pennsylvanian) and Strelina Metamorphics of Plafker, Lull, and others (1989) (Early Pennsylvanian and older?)
PENINSULAR TERRANE	Sedimentary and Volcanic Rocks
Km	Matanuska Formation (Late and Early Cretaceous)
Jlt	Talkeetna Formation (Early Jurassic and Late Triassic?)
Ji	Intrusive rocks (Late Jurassic)—As mapped, consists of tonalite, granodiorite, and graphic granite
Jmp	Layered mafic plutonic rocks (Middle Jurassic and older?)—As mapped, consists of the Nelchina River Gabbro (Middle Jurassic and older?), layered gabbro of the Tonsina ultramafic-mafic sequence, and layered quartz-bearing gabbro of Klanehechena Creek
Jum	Ultramafic rocks (Middle Jurassic and older?)—As mapped, consists of harzburgite, dunite, and websterite of the Tonsina ultramafic-mafic sequence
CHUGACH TERRANE	Sedimentary and Volcanic Rocks
Valdez Group (Late Cretaceous)—Divided into:	
Kvs	Sedimentary rocks
Kvv	Mafic volcanic rocks
Mm	McHugh Complex (Mesozoic)
TKm	Melange (Tertiary or Cretaceous)
Jm	Greenschist and transitional blueschist facies metamorphic rocks (Jurassic or older)—As mapped, consists of schist of Liberty Creek and schist of Iceberg Lake

PRINCE WILLIAM TERRANE

Sedimentary and Volcanic Rocks

Orca Group (Eocene and Paleocene)—Divided into:

Tos	Flyschoid sedimentary rocks
Tov	Tholeiitic volcanic rocks

g

Glaciers and supraglacial moraine

Contact—Approximately located. Dotted where concealed; queried where assumed

High-angle fault—Approximately located, showing dip. Dotted where concealed; queried where assumed

Thrust fault—Approximately located, showing dip, saw teeth on upper plate. Dotted where concealed; queried where assumed

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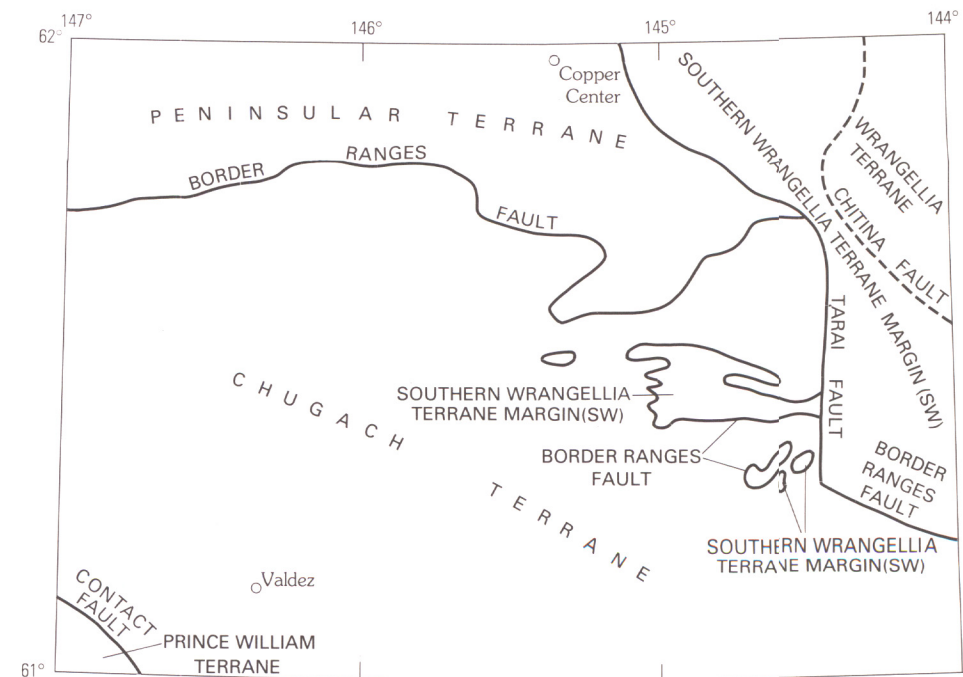
Geochemically anomalous area

GEOCHEMICALLY ANOMALOUS AREAS

1. Prince William terrane
2. Twin Falls Creek
3. Port Valdez mining district
4. South Port Valdez
5. Central sulfide belt
6. Woodworth Glacier
7. Cascade Creek
8. Cleave Creek Glacier
9. East side of the Copper River
10. Bremner River
11. East Fork of the Bremner River
12. East of Tetoy Lakes
13. Tonsina mining district
14. Tielke River-Stuart Creek
15. Ernestine Creek
16. Mt. Ounard
17. North of Tonsina Glacier
18. Black Mountain
19. Greyling Lake
20. Kimball Pass
21. Bernard and Dust Creeks
22. Summit Lake
23. Taral Creek
24. Hallet River-Iceberg Lake
25. Klanehechena Creek
26. Nelchina Glacier
27. High Lake
28. Kotsina River mining district
29. Wrangell Mountains
30. Dadina River
31. Copper River

REFERENCES

- Jones, D.L., and Silberling, N.J., 1979, Mesozoic stratigraphy—The key to tectonic analysis of southern and central Alaska: U.S. Geological Survey Open-File Report 79-1200, 41 p.
- Jones, D.L., Silberling, N.J., and Hillhouse, J., 1977, Wrangellia—A displaced terrane in northwestern North America: Canadian Journal of Earth Sciences, v. 14, p. 2565-2577.
- Plafker, George, Jones, D.L., and Pessagno, E.A., Jr., 1977, A Cretaceous accretionary flysch along the Gulf of Alaska margin, in Blear, K.M., ed., U.S. Geological Survey in Alaska—Accomplishments during 1976: U.S. Geological Survey Circular 751-B, p. B41-B43.
- Plafker, George, Lull, J.S., Nokleberg, W.J., Pessel, G.H., Wallace, N.K., and Winkler, G.R., 1989, Geologic map of the Valdez A-4, B-3 B-4, C-3, C-4, and D-4 quadrangles, northern Chugach Mountains and southern Copper River Basin, Alaska: U.S. Geological Survey Open-File Report 89-569, scale 1:125,000, 1 sheet.
- Plafker, George, Nokleberg, W.J., and Lull, J.S., 1989, Bedrock geology and tectonic evolution of the Wrangellia, Peninsular, and Chugach terranes along the Trans-Alaska Crustal Tract in the Chugach Mountains and southern Copper River Basin, Alaska: Journal of Geophysical Research, v. 94, no. B4, p. 4255-4295.
- Winkler, G.R., Silberman, M.L., Grantz, A., Miller, R.J., and MacKevett, E.M., Jr., 1981, Geologic map and summary geochronology of the Valdez quadrangle, southern Alaska: U.S. Geological Survey Open-File Report 80-892-A, scale 1:250,000, 2 sheets.



Bedrock units of the Valdez 1°x3° quadrangle are divided into four fault-bounded terranes that differ in stratigraphy, structural style, or age (paleontologic or radiometric) of their component rocks. From north to south, the terranes are (1) Wrangellia (Jones and others, 1977), (2) Peninsular (Jones and Silberling, 1979), (3) Chugach (redefined by Plafker and others (1977), and (4) Prince William (Jones and Silberling, 1979). Penetratively deformed rocks between the Taral and Chitina faults are interpreted to be deeply buried and metamorphosed equivalents of the type Wrangellia terrane and are included in the southern Wrangellia terrane margin of Plafker, Nokleberg, and Lull (1989).

MAP SHOWING GEOLOGY AND GEOCHEMICALLY ANOMALOUS AREAS, VALDEZ 1° x 3° QUADRANGLE, SOUTH-CENTRAL ALASKA

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